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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	21-03-2019
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6255	6198
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9715	9745
Wt. of sand in cone (w3) gms.	835	842
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3450	3413
Bulk density of sand (γs)gm/cc	1.3	1.3
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36
Moisture meter reading(moisture content)	12.10	12.10
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.10	2.11
MDD	2.14	2.14
OMC	13.50%	13.50%
%-compaction obtained	98.25	98.41
%-compaction required	98%	98%

Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	21-03-2019
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6255	6198
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9715	9745
Wt. of sand in cone (w3) gms.	835	842
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3450	3413
Bulk density of sand (γs)gm/cc	1.3	1.3
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36
Moisture meter reading(moisture content)	12.10	12.10
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.10	2.11
MDD	2.14	2.14
OMC	13.50%	13.50%
%-compaction obtained	98.25	98.41
%-compaction required	98%	98%

Consultant's Representative

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Name of Work	:	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	22-03-2019
Type of Mix	:	WMM
Sample ID	:	WMM 3

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	22-03-2019
Type of material & Purpose:	WMM	**Date of testing:**	22-03-2019
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	350	350	3.50	96.50	95-100
22.4	2600	2950	29.50	70.50	60-80
11.2	2500	5450	54.50	45.50	40-60
4.75	1500.0	6950	69.50	30.50	25-40
2.36	950.0	7900	79.00	21.00	15-30
0.6	715.0	8615	86.15	13.85	8.0-22.0
0.075	675.0	9290	92.90	7.10	0-8
Pan	710.0	10000			
Total	10000.0				

Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	At plant	**Date of Sampling**	**22-03-2019**
		Date of Testing	**22-03-2019**

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	611	85	526	74
16.0	12.5	1124	121	1003	110
12.5	10.0	776	65	711	65
10.0	6.3	616	51	565	41
Total		**3127**	**322**	**2805**	**290**

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%):	10.30		
		Elongation Index(%):	10.34		
		Combined FI+EL (%)	20.64		

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**22-03-2019**
Sample Location	**At plant**	**Date of Testing**	**22-03-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	396.00	394.00	392.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	312.00	301.00	305.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	84.00	93.00	87.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.21	23.60	22.19	
5	Average Aggregate impact value	(%)	22.34			Max - 30 %

Remarks: ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

	Date:	22-03-2019
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6195	6254
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9718	9712
Wt. of sand in cone (w3) gms.	855	850
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3400	3450
Bulk density of sand (ys)gm/cc	1.3	1.3
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(ys))gm/cc	2.37	2.36
Moisture meter reading(moisture content)	12.20	12.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.10
MDD	2.14	2.14
OMC	13.50%	13.50%
%compaction obtained	98.65	98.15
%compaction required	98%	98%

Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	22-03-2019
Layer no. or level	WMM I layer	
Depth of hole	250mm	
Field density:	1	2
Wt. of wet material from hole (Ww) gms.	6233	6126
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9715	9745
Wt. of sand in cone (w3) gms.	835	842
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3450	3413
Bulk density of sand (γs)gm/cc	1.31	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.35
Moisture meter reading(moisture content)	12.10	12.10
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.10
MDD	2.14	2.14
OMC	13.50%	13.50%
% compaction obtained	98.66	98.02
% compaction required	98%	98%

Consultant's Representative

TEJUS
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Test Report on Compressive Strength of Concrete Cubes

Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Palanahalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	Cement
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	15-03-2019	22-03-2019	7 days	8.832	22500	367	16.31	16.34
2	15-03-2019	22-03-2019	7 days	8.864	22500	366	16.27	
3	15-03-2019	22-03-2019	7 days	8.721	22500	370	16.44	

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Test Report on Compressive Strength of Concrete Cubes

Project:	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Kattigehalli)
Client:	Bruhat Bangalore Mahanagar Palike
Consultant:	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	site
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	18-03-2019	25-03-2019	7 days	8.832	22500	368	16.36	16.28
2	18-03-2019	25-03-2019	7 days	8.864	22500	366	16.27	
3	18-03-2019	25-03-2019	7 days	8.721	22500	365	16.22	

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Test Report on Compressive Strength of Concrete Cubes

Project:	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Kattigehalli)
Client:	Bruhat Bangalore Mahanagar Palike
Consultant:	TEJUS CONSULTANTS
Contractor:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	site
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	18-03-2019	25-03-2019	7 days	8.832	22500	294	13.07	13.23
2	18-03-2019	25-03-2019	7 days	8.864	22500	298	13.24	
3	18-03-2019	25-03-2019	7 days	8.721	22500	301	13.38	

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Project	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	DBM	**Date of Sampling**	**26-03-2019**
Sample Location	At plant	**Date of Testing**	**26-03-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	394.00	378.00	384.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	281.00	288.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	98.00	97.00	96.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.87	25.66	25.00	
5	Average Aggregate impact value	(%)	25.18			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

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Project:	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client:	Bruhat Bengaluru Mahanagara Palike
Consultant:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material:	DBM		**Proposed Use**	**DBM**
Sample Location:	At plant		**Date of Sampling**	**26-03-2019**
			Date of Testing	**26-03-2019**

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	7841	675	7166	400
31.5	25.0	4251	500	3751	290
25.0	20.0	2453	27	2426	220
20.0	16.0	1564	341	1223	300
16.0	12.5	564	96	468	170
12.5	10.0	283	60	223	100
10.0	6.3	122	80	42	80
Total		**17078**	**1779**	**15299**	**1560**

Results:

Flakiness Index(%):	10.42
Elongation Index(%):	10.20
Combined FI+EL (%)	20.61

Consultant's Representative

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Name of Work	:	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	26-03-2019
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.760	0.744
Final weight of plate after application of tack Coat (c)	Kg	0.783	0.767
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX

Name of Work	:	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	26-03-2019
Type of Mix	:	DBM
Sample ID	:	DBM-1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	834	947
2. Weight of Mixture after extraction, g	797	911
3. Weight of Bitumen	37	36
4. Weight of filter paper before extraction, g	2.00	2.00
5. Weight of filter paper after extraction, g	4.00	4.00
6. Weight of fines, g	2.00	2.00
7. Weight of Bitumen & fines	39.00	38.00
8. Bitumen content in %	4.68	4.01
9. Average Bitumen content in %	4.34	
10. Minimum Bitumen content in %	4.50	

GRADATION FOR DBM AFTER EXTRACTION

(As per MORT&H 500-10,Grading-2)

Sample Location:	At site	**Date of Sampling:**	26-03-2019
		Date of testing:	26-03-2019
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	797

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0.0	0.0	0.00	100.00	100.00
26.50	29.0	29.0	3.64	96.36	90-100
19.00	123.0	152.0	19.07	80.93	71-95
13.20	109.0	261.0	32.75	67.25	56-80
4.750	157.0	418.0	52.45	47.55	38-54
2.360	91.0	509.0	63.86	36.14	28-42
0.300	140.0	649.0	81.43	18.57	7-21
0.075	106.0	755.0	94.73	5.27	2-8
Pan	42.0				
Total	797.0				

Consultant's Representative

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Name of Work	:	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	26-03-2019
Type of Mix	:	DBM
Sample ID	:	DBM-1

GRADATION FOR DBM

(As per MORT&H 500-10,Grading-2)

Sample Location:	At plant	**Date of Sampling:**	26-03-2019
		Date of testing:	26-03-2019
Type of material & Purpose:	DBM	**Oven Dry Wt.(gms):**	1500.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
37.50	0	0	0.00	100.00	100.00
26.50	80	80	5.33	94.67	90-100
19.00	113	193	12.87	87.13	71-95
13.20	222	415	27.67	72.33	56-80
4.750	341	756	50.40	49.60	38-54
2.360	186	942	62.80	37.20	28-42
0.300	278	1220	81.33	18.67	7-21
0.075	176	1396	93.07	6.93	2-8
Pan	104	1500			
Total	1500.0				

Consultant's Representative

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